What is claimed is:

1. An optical system comprising:

a cemented lens element, formed by cementing at least two constituent lens elements made of different optical materials together, and having a diffractive optical surface formed at a cementing interface between the two constituent lens elements, the two constituent lens elements having at their respective interfaces with air a radius of curvature different from a radius of curvature that they have at the cementing interface.

2. An optical system as claimed in claim 1,

wherein one of the two constituent lens elements of the cemented lens element has a refractive optical power of an opposite sign to a diffractive optical power of the cementing interface.

3. An optical system as claimed in claim 1,

wherein the two constituent lens elements of the cemented lens element have different refractive optical powers.

4. An optical system as claimed in claim 1,

wherein the cemented lens element fulfills the following condition:

$$0.1 \leq (\phi p / \nu d) / (\phi DOE / \nu DOE) \leq 35$$

where

ϕp represents a refractive optical power of that one of the two constituent lens elements of the cemented lens element which has a refractive optical power of an opposite sign to a diffractive optical power of the cementing interface;

νd represents an Abbe number of that one of the two constituent lens elements of the cemented lens element which has a refractive optical power of an opposite sign to the diffractive optical power of the cementing interface;

ϕDOE represents the diffractive optical power of the cementing interface; and

νDOE represents an Abbe-number-equivalent value of the cementing interface.

5. An optical system as claimed in claim 1,

wherein the cemented lens element fulfills the following condition:

$$0.04 \leq tp / tg \leq 5$$

where

tp represents an axial distance of that one of the two constituent lens elements of the cemented lens element which has a refractive optical power of an opposite sign to a diffractive optical power of the cementing interface; and

tg represents an axial distance of that one of the two constituent lens elements of the cemented lens element which has a refractive optical power of a same sign as the diffractive optical power of the cementing interface.

6. An optical system as claimed in claim 1,

wherein the optical system is a zoom lens system.

7. An optical system as claimed in claim 1,

wherein the optical system is a zoom lens system having a plurality of lens units, at least two of the lens units each including a cemented lens element as recited in claim 1.

8. An optical system for use in a taking optical system for projecting an image on a solid-state image sensor, comprising:

a cemented lens element, formed by cementing at least two constituent lens elements made of different optical materials together, and having a diffractive optical surface formed at a cementing interface between the two constituent lens elements, the two constituent lens elements having at their respective interfaces with air a radius of curvature different from a radius of curvature that they have at the cementing interface; and

an optical low-pass filter disposed between the optical system and an image-sensing surface of the solid-state image sensor.

9. An optical system as claimed in claim 8,

wherein one of the two constituent lens elements of the cemented lens element has a refractive optical power of an opposite sign to a diffractive optical power of the cementing interface.

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10. An optical system as claimed in claim 8,

wherein the two constituent lens elements of the cemented lens element have different refractive optical powers.

11. An optical system as claimed in claim 8,

wherein the cemented lens element fulfills the following condition:

$$0.1 \leq (\phi p / \nu d) / (\phi DOE / \nu DOE) \leq 35$$

where

ϕp represents a refractive optical power of that one of the two constituent lens elements of the cemented lens element which has a refractive optical power of an opposite sign to a diffractive optical power of the cementing interface;

νd represents an Abbe number of that one of the two constituent lens elements of the cemented lens element which has a refractive optical power of an opposite sign to the diffractive optical power of the cementing interface;

ϕDOE represents the diffractive optical power of the cementing interface; and

νDOE represents an Abbe-number-equivalent value of the cementing interface.

12. An optical system as claimed in claim 8,

wherein the cemented lens element fulfills the following condition:

$$0.04 \leq tp / tg \leq 5$$

where

tp represents an axial distance of that one of the two constituent lens elements

of the cemented lens element which has a refractive optical power of an opposite sign to a diffractive optical power of the cementing interface; and

tg represents an axial distance of that one of the two constituent lens elements of the cemented lens element which has a refractive optical power of a same sign as the diffractive optical power of the cementing interface.

13. An optical system as claimed in claim 8, wherein the optical system is a zoom lens system.

14. An optical system as claimed in claim 8, wherein the optical system is a zoom lens system having a plurality of lens units, at least two of the lens units each including a cemented lens element as recited in claim 8.

15. A method for correcting aberration, comprising steps of:

disposing a cemented lens element in the optical system; and

optimizing correction of all aberrations occurring over the entire optical system,

wherein the cemented lens element is formed by cementing at least two constituent lens elements made of different optical materials together, with a diffractive optical surface formed at a cementing interface between the two constituent lens elements, the two constituent lens elements having at their respective interfaces with air a radius of curvature different from a radius of curvature that they have at the

cementing interface.

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